

REMARKS

Claims 1-17 remain pending in the application and stand rejected.

Applicants respectfully request reconsideration in view of the following remarks, and further in view of the Declaration of James W. Schmitkons filed on even date herewith.

Claims Rejected Under 35 U.S.C. § 102

Claim 17 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,457,846 to Cook et al. Claim 17 is directed to a method of converting a lamp assembly between a focused pattern of radiation emission and a flood pattern of radiation emission comprising:

moving the first and second movable reflective bodies in respective paths of movement relative to the radiation source to define a focus position of the reflective bodies at a first spaced apart width,

emitting a first amount of radiation from the radiation source,

reflecting the first amount of radiation off the reflective bodies and toward the curing area in the focused pattern,

moving the first and second reflective bodies relative to the radiation source to positions defining a flood position of the reflective bodies at a second spaced apart width smaller than the first spaced apart width,

emitting a second amount of radiation from the radiation source, and

reflecting the second amount of radiation off the reflective bodies and toward the curing area in the flood pattern.

In the final Office Action at page 8, the Examiner refers to Figures 3A-3C of Cook '846, alleging that these figures depict a lamp assembly that is capable of

emitting radiation in either a flood pattern or a focused pattern. Applicants respectfully traverse because none of these figures depict a focused pattern of radiation emission. As set forth in the Declaration of James W. Schmitkons, filed on even date herewith, Figures 3A-3C of Cook '846 depict only flood patterns of radiation emission. Applicants note that, in the field of ultraviolet lamps, "flood" and "focused" are terms of art. In particular, a focused pattern of radiation emission refers to operation of the lamp such that all of the light reflected by the lamp converges at a single point, under the theoretical conditions of a point light source and perfectly formed reflectors. In contrast, a flood pattern of radiation emission refers to operation of the lamp such that all reflected light does not converge at a single point, under the theoretical conditions of a point light source and perfectly formed reflectors.

Figures 3A-3C of Cook '846 show light ray traces depicting the theoretical operation of a lamp. Because the ray trace lines in Figures 3A-3C do not converge at a single point, none of these figures represents a focused condition of the lamp. Instead, the relatively closer spacing of the ray trace lines depicted in Figures 3B and 3C represent more intense radiation emission from the lamp in the area directly beneath the lamp, compared to the configuration depicted in Figure 3A, where the line spacing in this area is further apart. Cook '846 states that the side elements of the device disclosed therein are movable to vary the intensity of the emitted radiation: "It has been found that making the side elements adjustable and preferably rotatable, it is possible to vary the intensity of the UV output of the radiation source." (Cook '846 at column 3, lines 58-61.) "The variation in peak output intensity which is possible with the lamp assembly 2 is illustrated in Figs. [3A, 3B and 3C]. The regions on the substrate 24 which receive the greatest amount of radiation is changed by adjusting the position of the side

elements." (Cook '846 at column 5, lines 53-57.) Applicants note that the reference to Figures "4A, 4B and 4C" at col. 5, lines 54-55 is an obvious typographical error, as is apparent upon inspection of the figures of Cook '846, and should refer to Figures 3A, 3B and 3C.

For at least the reasons set forth above, Applicants respectfully assert that Cook '846 does not teach or suggest a lamp assembly which can be converted between focused and flood patterns of radiation emission. Accordingly, Applicants respectfully request that the rejection of claim 17 over Cook '846 be withdrawn.

Claims Rejected Under 35 U.S.C. § 103

Claims 1-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cook '846. Applicants note that while the Examiner has explicitly rejected claims 1-12 over Cook '846, the detailed action also discusses the rejections of claims 13-16 over Cook '846. Applicants presume that the reference to claims 1-12 is a typographical error and therefore have addressed the rejections with respect to claims 1-16. If this presumption is incorrect, the Examiner is respectfully requested to telephone the undersigned attorney to resolve the matter.

Claims 1, 8, 9 and 13 are the only independent claims of this rejected group and are directed to lamp assemblies that are adjustable to emit radiation in focused and flood patterns, or methods of converting a lamp between focused and flood patterns of radiation emission. Applicants respectfully traverse the rejections of claims 1, 8, 9 and 13 over Cook '846 because Cook '846 does not teach or suggest converting a lamp assembly between flood and focused patterns of radiation emission. Specifically, as discussed above with respect to claim 17, Cook '846 only teaches a

lamp that operates to emit radiation in a flood pattern, and there is no teaching or suggestion in the references of record to modify the lamp of Cook '846 to emit radiation in a focused pattern.

Applicants further traverse the rejections of claims 1, 9 and 13 because Cook '846 does not teach or suggest first and second movable stop members, as recited in claim 1, or moving first and second stop members out of paths of movement of first and second movable reflective bodies, as recited in claims 9 and 13. The Examiner asserts that it would have been obvious to include such movable stop members in the lamp of Cook '846 simply because Cook '846 discloses a movable shuttering system. Applicants note, however, that no reference has been cited that teaches or suggests modifying the apparatus of Cook '846 to include these movable stop members. The Office Action therefore fails to establish a *prima facie* case of obviousness with respect to claims 1, 9 and 13.

Claim 8 is directed to a lamp assembly comprising:

a radiation source,

a reflector having first and second movable reflective bodies each having a concave reflective surface, said first and second reflective bodies cooperating to partially surround said radiation source and being movable to define an emission opening positioned therebetween to emit radiation from said radiation source toward the substrate, and

an actuating system coupled to said first and second reflective bodies and configured to effect movement thereof between at least first and second positions, said first position placing said first and second reflective bodies at a first spaced apart width and causing radiation from said radiation source to be emitted through said emission opening in a focused pattern and said second position placing said first and second reflective bodies at a second spaced apart width and causing radiation from said radiation source to be

emitted through said emission opening in a flood pattern,

wherein said first spaced apart width is greater than
said second spaced apart width.

Applicants further traverse the rejection of claim 8 over Cook '846 because Cook '846 fails to teach or suggest an actuating system that moves first and second reflective bodies between a first spaced apart width causing radiation to be emitted in a focused pattern, and a second spaced apart width wherein radiation is emitted in a flood pattern. Rather, the various positions of the movable side elements of Cook '846 are operable only to vary the intensity of the emitted radiation and do not alter the emitted radiation between focused and flood patterns, as discussed above with respect to claim 17. For at least the reasons discussed above, Applicants respectfully request that the rejections of claims 1, 8, 9 and 13 over Cook '846 be withdrawn.

Claims 2-7 each depend from independent claim 1, claims 10-12 each depend from independent claim 9, and claims 14-16 each depend from independent claim 13. Accordingly, claims 2-7, 10-12 and 14-16 are in condition for allowance for at least the same reasons stated above for claims 1, 9 and 13 and Applicants respectfully request that the rejections of these claims be withdrawn.

This application is now believed to be in complete condition for allowance and Applicants respectfully request notice to this effect. If there is any issue remaining that may be resolved by telephone, the Examiner is invited to contact Applicants' undersigned counsel to expedite the issuance of this application.

Applicants believe that no fees are due in connection with this response other than the extension fee. However, if such petition is due or any other fees are

necessary, the Commissioner may consider this to be a request for such and charge any necessary fees to deposit account 23-3000.

Respectfully submitted,

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